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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,348	10/28/2003	James H. Powers	2003-0517.02	5613

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LEXMARK INTERNATIONAL, INC.
INTELLECTUAL PROPERTY LAW DEPARTMENT
740 WEST NEW CIRCLE ROAD
BLDG. 082-1
LEXINGTON, KY 40550-0999

EXAMINER	
NGUYEN, THINH H	
ART UNIT	**PAPER NUMBER**
2861	

DATE MAILED: 02/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

AJC

Office Action Summary	Application No.	Applicant(s)	
	10/695,348	POWERS ET AL.	
	Examiner	Art Unit	
	Thinh H. Nguyen	2861	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-26 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Onishi (U.S.6,698,875) in view of Gompertz et al.(U.S.5,742,306) and Logan (U.S.4,680,596)

Re claims 1, 20, 26, Onishi (figs. 1, 5; Table 1, third embodiment (m)) discloses elements of the instant claimed ink jet printer and method of printing, including

a carrier (31)for mounting a first printhead and a second printhead;

a first ink reservoir coupled in fluid communication with said first printhead, said first ink reservoir containing a chromatic dye-based ink (fig.4, 74, 75);

a second ink reservoir coupled in fluid communication with said second printhead, said second ink reservoir containing a chromatic pigment-based ink. (fig.4, 76, 77);

claims 2, 17, 2, wherein said chromatic dye-based ink and said chromatic pigment-based ink have substantially the same hue, but different chroma. (col.5, line 52 – col.6, line 4)

claim 3, 22, wherein said hue is one of cyan and magenta. (col.5, line 52 – col.6, line 4)

claim 16, a controller (40) electrically coupled to each of said first printhead and said second printhead, said controller being configured to form a color image on a print medium using both said chromatic dye-based ink and said chromatic pigment-based ink.

Onishi discloses every element of the instant claimed subject matter as noted above with the exception of said chromatic pigment-based ink has a lower optical density than said chromatic dye-based ink; said chromatic pigment-based ink has a lower colorant concentration than said chromatic dye-based ink; wherein said chromatic pigment- based ink has a lower chroma than said chromatic dye-based ink; said chromatic pigment-based ink has a lower chroma than said chromatic dye-based ink by at least 10 percent of full saturation; said chromatic pigment-based ink has a lower optical density than said chromatic dye-based ink; said second ink reservoir including a plurality of ink chambers containing a plurality of chromatic pigment-based inks, each having a respective hue, and said second printhead including a plurality of nozzle arrays, wherein a first nozzle array of said plurality of nozzle arrays is coupled in fluid communication with a first ink chamber of said plurality of ink chambers that contains a first chromatic ink having a first hue, and a second nozzle array of said plurality of nozzle arrays is coupled in fluid communication with a second ink chamber of said plurality of ink chambers that contains an achromatic ink; said second ink reservoir including a third nozzle array coupled in fluid communication with a third ink chamber

containing a second chromatic ink having a second hue different from said first hue, said second nozzle array for jetting said achromatic ink being positioned between said first nozzle array for jetting said first chromatic ink having said first hue and said third nozzle array for jetting said second chromatic ink having said second hue; wherein said first chromatic ink is one of cyan and magenta and the second chromatic ink is the other of cyan and magenta.

wherein said achromatic ink is black; said first printhead and said first ink reservoir are configured as a first unitary printhead cartridge; said second printhead and said second ink reservoir are configured as a second unitary printhead cartridge.

Gompertz (col.8, lines 7- 25) suggests that both partial and full concentration black and color inks can have a variety of different percentage of concentration (i.e. 10%, 40%), and each color ink can have both dye and pigment characteristics with respect to its different concentration (col.5, lines 7-14; col.5, line 56 – col.6, line 8). As suggested in this aspect, it would be clear that a reduced amount of pigment concentration of the pigment ink would yield a pigment ink with less optical density compared to that of the dye ink of the same hue.

Gompertz (Table 1, image 1) also suggests the use of black ink as dye or pigment (col.5, lines 66-67); said first printhead and said first ink reservoir are configured as a first unitary printhead cartridge (as shown by second cartridge); said second printhead and said second ink reservoir are configured as a second unitary printhead cartridge (as shown by third cartridge)

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the concentration of dye, pigment in one color ink of a same hue but different concentrations so that to achieve a desired print color with different tonality.

Re claims 1, 20, 26, the limitation of the separate printhead is being used for different type of ink is made obvious by the unitary structure printhead of Gompertz. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the printhead in Onishi into a separate printhead for different type of ink. The reason for this modification is to provide convenience and cost effective as when one of the cartridges need to be replaced.

The communication between the specified ink container and the printhead is apparent as disclosed by the printhead structure of Gompertz to provide ink flow from the cartridge to the printhead.

Onishi in view of Gompertz et al. discloses every element of the instant claimed subject matter as noted above with the exception of a physical separation between said first printhead and said second printhead builds in a drying time between a time that a chromatic dye-based ink drop expelled by said first printhead contacts a chromatic pigment-based ink drop expelled from said second printhead at a particular pixel location on a print media sheet or at an adjacent location on said print media sheet where said chromatic dye-based ink drop and said chromatic pigment-based ink drop may overlap.

Logan (col.4, line 50 – col.5, line 11) teaches the aspect of physical separation between nozzle groups taken literally as separate printheads. The spacing between these printheads provide delay time for drying before dot being overprinted at a particular pixel. It would have been obvious to one of ordinary skill in the art at the time the invention was made to physically arrange the first and second printheads with a spacing in Onishi in view of Gompertz according to the Logan overall basic teachings for the purpose of promote drying time between ink drop ejection from different printhead to a same pixel location.

Patent Application Information Retrieval (PAIR)

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Response to Amendment

Applicant's Amendment filed December 12, 2005 has been entered and carefully considered.

Applicants' arguments with respect to new issues that a physical separation between said first printhead and said second printhead builds in a drying time between a time that a chromatic dye-based ink drop expelled by said first printhead contacts a chromatic pigment-based ink drop expelled from said second printhead at a particular pixel location on a print media sheet or at an adjacent location on said print media sheet where said chromatic dye-based ink drop and said chromatic pigment-based ink drop may overlap. have been considered as noted in the above new grounds of rejection.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication should be directed to examiner Thinh Nguyen at telephone number (571) 272-2257. The examiner can generally be reached Mon-Wed, Thursday from 9:00A – 5:00P. The official fax phone number for the organization is (571) 273-8300. The examiner supervisor, Dave Talbott, can also be reached at (571) 272-1934.

Any inquiry of a general nature or relating to the status of this application should be directed to the group receptionist whose telephone number is (703) 308-1782.

Thinh Nguyen

February 13, 2006

Thinh Nguyen
Primary Examiner
Technology Center 2800